

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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Order Instituting Rulemaking Regarding  
Policies, Procedures and Rules for  
Development of Distribution Resources  
Plans Pursuant to Public Utilities Code  
Section 769

R.14-08-013  
August 14, 2014

**RESPONSE OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
ON ORDER INSTITUTING RULEMAKING**

Donald C. Liddell  
DOUGLASS & LIDDELL  
2928 2<sup>nd</sup> Avenue  
San Diego, California 92103  
Telephone: (619) 993-9096  
Facsimile: (619) 296-4662  
Email: [liddell@energyattorney.com](mailto:liddell@energyattorney.com)

Attorney for the  
**CALIFORNIA ENERGY STORAGE ALLIANCE**

September 5, 2014

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding  
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**RESPONSE OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
ON ORDER INSTITUTING RULEMAKING**

The California Energy Storage Alliance (“CESA”)<sup>1</sup> hereby submits this response pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), and the *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769*, filed on August 14, 2014 (“OIR”).

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<sup>1</sup> 1 Energy Systems Inc. | A123 Energy Systems | AES Energy Storage | Alton Energy | American Vanadium | Aquion Energy | ARES North America | Beacon Power, LLC | Bosch Energy Storage Solutions Company LLC | Bright Energy Storage Technologies | Brookfield | CALMAC | Chargepoint | Clean Energy Systems | Coda Energy | Consolidated Edison Development, Inc. | Customized Energy Solutions | Demand Energy | DN Tanks | Duke Energy | Eagle Crest Energy Company | EaglePicher Technologies, LLC | East Penn Manufacturing Company | Ecoult | EDF Renewable Energy | Enersys | EnerVault Corporation | EV Grid | FAFCO Thermal Storage Systems | FIAMM Energy Storage Solutions | Flextronics | Foresight Renewable Solutions | GE Energy Storage | Green Charge Networks | Greensmith Energy | Gridscape Solutions | Gridtential Energy, Inc. | Halo technics | Hitachi Chemical Co. | Hydrogenics | Ice Energy | Imergy Power Systems | ImMODo Energy Services Corporation | Sumitomo Electric Group | Invenergy LLC | K&L Gates | KYOCERA Solar, Inc. | LG Chem | LightSail Energy | LS Power Development, LLC | Mitsubishi International Corporation | NextEra Energy Resources | NRG Solar LLC | OCI Company | OutBack Power Technologies | Panasonic | Parker Hannifin Corporation | PDE Total Energy Solutions | Powertree Services Inc. | Primus Power Corporation | Recurrent Energy | Renewable Energy Systems Americas Inc. | Rosendin Electric | S&C Electric Company | Saft America Inc. | SEEO | Sharp Electronics Corporation | SolarCity | Sovereign Energy Storage LLC | STEM | Stoel Rives | SunPower | TAS Energy | Tri-Technic | UniEnergy Technologies, LLC | Wellhead Electric. The views expressed in this Prehearing Conference Statement are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. See, <http://storagealliance.org>.

## **I. INTRODUCTION.**

CESA applauds the Commission for opening this rulemaking and is pleased to participate in reshaping the way California approaches distribution planning to accelerate effective and efficient deployment of distribution energy resources (“DER”s). While CESA recognizes the complexity involved in developing transparent and robust distribution resource plans (“DRP”s), a properly implemented DRP process, as envisioned by AB 327, will enable DER providers, including providers of energy storage, to offer need-based products to optimize distribution grid reliability, safety, resiliency, and cost-effectiveness while simultaneously maximizing progress toward achieving California’s energy and climate goals.

## **II. RESPONSES TO SPECIFIC QUESTIONS.**

The Commission posed the following questions for interested parties to comment on:

1. What specific criteria should the Commission consider to guide the IOUs’ development of DRPs, including what characteristics, requirements and specifications are necessary to enable a distribution grid that is at once reliable, safe, resilient, cost-efficient, open to distributed energy resources, and enables the achievement of California’s energy and climate goals?

**Response:** At a minimum, the DRP criteria should include stakeholder access to transparent price signals for grid benefits and “non-wires” alternatives to distribution upgrades that incorporate each distribution system’s short-term and long-term true costs to serve in a temporal and locational framework. The DRP should also include criteria to ensure that multiple ownership models and competition are preserved as the utilities develop DRPs. For example, timeliness of interconnection of utility-owned and customer or third-party owned assets can readily be tracked.

2. What specific elements must a DRP include to demonstrate compliance with the statutory requirements for the plan adopted in AB 327?

**Response:** DRPs must include a transparent evaluation framework for identifying and signaling to stakeholders the distribution system’s short term and long term true costs to serve by time and location, including timeframes as granular as minutes or seconds and locations as particular as neighborhoods or city blocks. These cost and price signals must be implemented in parallel with a market that allows for business model neutrality, and a full array of tariffs, contracts, and other incentive mechanisms. In addition to business model neutrality, the DRPs must integrate existing incentive programs (and ideally provide information that can enhance them), such as the Self-Generation Incentive Program (“SGIP”), to promote their stated goals, including the SGIP’s focus on peak load and greenhouse gas (“GHG”) emission reductions.

3. What specific criteria should be considered in the development of a calculation methodology for optimal locations of DERs?

**Response:** Care should be taken to make any price signal methodology as straightforward as possible with bankable and deployable attributes. CESA recommends that during this proceeding, the utilities and other stakeholders conduct a thorough review of the Distribution Marginal Price (“DMP”) concept (*e.g.* DMPs as presented by Integral Analytics).<sup>2</sup>

4. What specific values should be considered in the development of a locational value of DER calculus? What is optimal means of compensating DERs for this value?

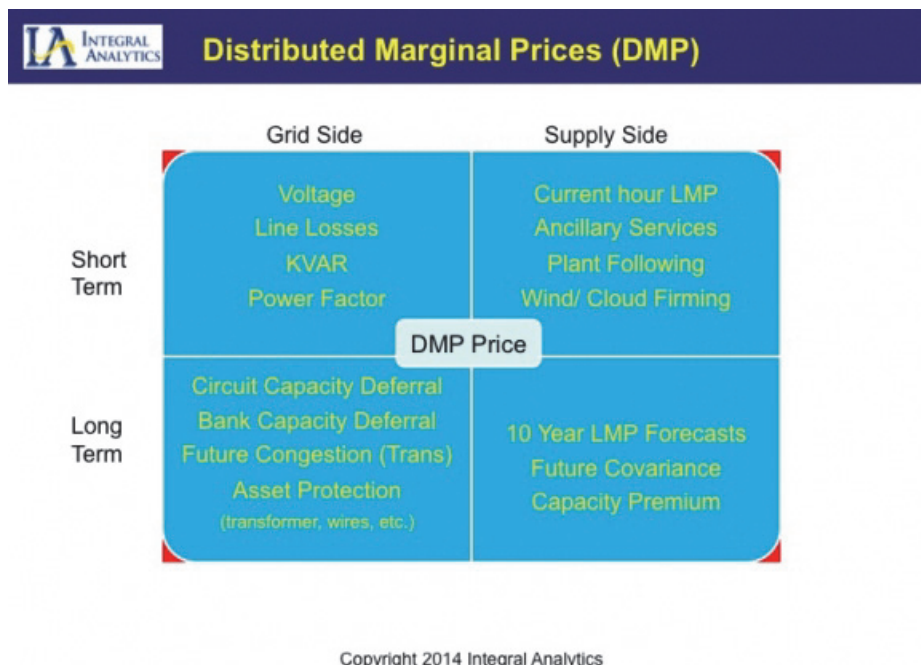
**Response:** Utilizing a DMP or equivalent methodology would ideally incorporate both short term and long-term distribution grid costs to serve by location and time. Overlaying the dispatch profiles of various DERs, or the available capacity for dispatching on demand at times

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<sup>2</sup> *Distributed Marginal Prices (DMPs) Update #6*, Tom Osterhus, PhD (CEO, Integral Analytics) and Michael Ozog, PhD (VP, Integral Analytics); For a summary of Integral Analytics’ DMP white paper, see Green Tech Media, “Distributed Marginal Price: The New Metric for the Grid Edge?” August 21, 2014, <http://www.greentechmedia.com/articles/read/distributed-marginal-price-dmp-the-new-metric-for-the-grid-edge>.

of congestion (*e.g.*, through demand response), a DMP could be used directly or as a proxy for the locational value of the various DERs over their respective project lives.

As a starting point, CESA suggests that values included in DMPs calculations should consist of components as presented by Integral Analytics discussion of DMPs in the following matrix:<sup>3</sup>



In addition to the matrix above, CESA recommends that valuation of a specific DER's ability to enable increased penetration and integration of other DERs on the distribution system be considered within the construct of the DMP and the utilities' DRPs.

5. What specific considerations and methods should be considered to support the integration of DERs into IOU distribution planning and operations?

Response: CESA recommends a thorough investigation of the DMP concept in the utilities' distribution planning and operations. Particular emphasis should be placed on specific DERs that can enable increased penetration of other DERs on the distribution system to promote

<sup>3</sup> *Idem.* p 8.

the State's energy and climate goals. In a similar light, emphasis should be placed on DERs with the ability to supply capacity and/or offset loads during location-specific peaks in demand or cost to serve. CESA believes that the DMP approach aligns with this concept and rightly places value on reliability and cost-effectiveness.

A phased-in approach may be necessary. For example, a phased rollout of DMPs, in which the initial phase, the utilities' selected representative distribution circuits to pilot test the DMP price signal construct, open the signal to business model-neutral DER participation on that circuit, evaluate cost-effectiveness, and inform future phases of the rollout to an increasing number of circuits on the distribution system.

6. What specific distribution planning and operations methods should be considered to support the provision of distribution reliability services by DERs?

**Response:** CESA has no specific comment at this time, but reserves the right to comment on the topic during the course of this proceeding.

7. What types of benefits should be considered when quantifying the value of DER integration in distribution system planning and operations?

**Response:** See CESA's response to Question Number 4, above.

8. What criteria and inputs should be considered in the development of scenarios and/or guidelines to test the specific DER integration strategies proposed in the DRPs?

**Response:** The DMP concept can be used to develop transparent and fair comparisons of various DER deployment scenarios and strategies.

9. What types of data and level of data access should be considered as part of the DRP?

**Response:** Price signals, such as DMPs, that incorporate each distribution system's short term and long term true costs to serve in a temporal and locational framework, are one component. However, for underlying price signals to work, there must be a distribution planning

process that allows for stakeholders to understand the drivers and proposed solutions distribution level issues that IOUs have identified. This process could be generally based on the model of the CAISO's Transmission Planning Process.

10. Should the DRPs include specific measures or projects that serve to demonstrate how specific types of DER can be integrated into distribution planning and operation? If so, what are some examples that IOUs should consider?

**Response:** One approach to demonstrate DER integration into distribution planning and operation would be a phased rollout of DMPs, whereby in the initial phase, the utilities select representative distribution circuits to pilot test the DMP price signal construct, open the signal to business model and ownership-neutral DER participation within that circuit, evaluate cost-effectiveness, and inform future phases of the rollout.

11. What considerations should the Commission take into account when defining how the DRPs should be monitored over time?

**Response:** All DRP implementation monitoring should include evaluation metrics to ensure a level playing field that encourages multiple ownership models—recognizing the advantaged position the utility enjoys with respect to distribution system information and interconnection approval authority.

CESA also believes that monitoring DERs should include their ability and simplicity to interact with the Distribution System Operator (“DSO”) or CAISO and to supply capacity and/or reduce loads when necessary. This feature is commonly considered one of the strengths of centralized power generation, and for justifiable reasons. However, CESA believes that many DERs—particularly energy storage resources—can serve this fundamental role of rapidly supplying capacity and flexible capacity when supply and demand are misaligned. The ability of DERs to supply this capacity through simple communication means should be monitored.

12. What principles should the Commission consider in setting criteria to govern the review and approval of the DRPs?

Response: CESA recommends that transparent price signals and business model neutrality be used as guiding principles to approve DRPs in addition to cost-effectiveness, reliability, safety, and meeting the State's energy and climate goals. CESA recommends two additional principles:

- Preserve competition through open protocols, standards and access to data (where possible).
- Ensure that IOU utility incentives under the new DER framework are well aligned with all key guiding principles and goals. This recognizes the fact that the introduction of many DERs may fundamentally change the business model of the utility itself. If incentives are not well aligned, then progress may be less than efficient.

13. Should the DRPs include discussion of how ownership of the distribution may evolve as DERs start to provide distribution reliability services? If so, briefly discuss those areas where utility, customer and third party ownership are reasonable.

**Response:** Business model neutrality should be a key consideration in approval of the utilities' DRPs. The reasonableness of utility, customer, and third-party ownership can all be tested in a phased rollout of DERs, using quantifiable metrics to ensure a level playing field across all ownership models. Again, as stated above, it is also very important to explicitly address utility incentives and business model under a variety of scenarios.

14. What specific concerns around safety should be addressed in the DRPs?

**Response:** The DRPs should highlight where existing state and national standards may be insufficient from a safety standpoint.

15. What, if any, further actions, should the Commission consider to comply with Section 769 and to establish policy and performance guidelines that enable electric utilities to develop and implement DRPs? Attachment 1 to this order is a complete copy of AB 327 as enacted.



**Response:** CESA has no specific comment at this time, but reserves the right to comment on the topic during the course of this proceeding.

16. Appendix B to this rulemaking is a white paper that articulates one potential set of criteria that could govern the IOUs DRPs. Please review the attached paper and answer the following questions:

- a. Integrated Grid Framework: the paper opens by presenting an ‘Integrated Grid Framework,’ what additions or modifications would you suggest be made to this framework?

**Response:** CESA applauds this framework for capturing a broad set of inter-related and complex issues. One way this framework can be enhanced is by explicitly considering the underlying assumptions embedded in the framework and then adjusting if necessary. For example, the underlying “electricity product” appears to be taken as a given; and that the primary product offered to ratepayers will be essentially the same as today.

CESA recommends adding another layer in the “What Do We Want to Achieve” section of the framework following the Policy Goals layer called “Customer Goals,” which would broadly represent the goals and objectives of electric system users. It is important to consider the needs and desires of customers explicitly in this framework. For example, some customers may explicitly choose to have higher levels of electric reliability and may prefer to outsource such levels of reliability to third parties or their DSO. Others may prefer to be 100% renewable, with no ability to do so from their own footprint.

Adequately identifying the needs of ratepayers and segmenting them accordingly at a sufficiently granular resolution will help ensure that the resulting electric power system and the role of DERs is robust and meets the needs of the most important stakeholder- the customer! Doing so will also help define metering and verification requirements, help to uncover new opportunities for collaboration, and impact any resulting ratemaking efforts. The underlying

“Distributed System Qualities” and DER implementation plans can then support these overarching customer goals.

- b. Integrated Distribution Planning: what, if any, additions or modifications would you suggest to the Integrated Distribution Planning section of this paper?

**Response:** CESA applauds the thoughtfulness and level of detail of this section of the paper. One important area where this section maybe augmented is in extending the concept of ‘key tradeoffs’. A very critical tradeoff that needs to be explicitly considered is how utility shareholder returns will be affected by enabling third party or customer-owned assets from participating in DSO operations. Not only must the safety, operational and value optimizing aspects of such decisions be considered, but so also should the very real impact to utility shareholders. If incentives are not aligned, then utility shareholders will be less than supportive of any alternative approach that may result in optimal system outcomes to the ultimate detriment of shareholder returns. CESA recommends that explicit mechanisms to make investor shareholders whole for customer-owned and third party owned assets be developed, particularly since they represent a different asset risk profile from what utilities have been traditionally accustomed to.

- c. Distribution System Design-Build: what, if any, additions or modifications would you suggest to the Distribution System Design-Build section of this paper?

**Response:** Please see response to question b, above.

- d. Integrated Distribution System Operations: what, if any, additions or modifications would you suggest to the Integrated Distribution System Operations section of this paper?

**Response:** In the spirit of CESA’s response to question b, above, CESA agrees with the proposal to consider an expanded DSO role. CESA reserves the right to comment on this further on this important topic as this proceeding progresses. CESA finds the following quoted passage

worthy of detailed exploration by the Commission with respect to energy storage enabling the kind of market services within the electric distribution system that already exist in the model of the gas distribution system:

“Also, incorporation of energy storage into the distribution system may enable DSOs to offer new non-core market enabling services similar to those provided by natural gas distribution utilities. Such services may include “park and loan,” where parties may park or store energy that cannot be delivered immediately to be scheduled for delivery at another time. Likewise, DSOs may sell or loan short-term real or reactive power as needed to make-up for deficiencies in scheduled deliveries. The gas operational concept of “line pack” to increase the amount of energy that may be delivered in a short period may also be adapted to electric distribution systems with certain energy storage and demand management technology.”<sup>4</sup>

CESA will provide detailed comment on parallels to the natural gas distribution system during the course of this proceeding.

- e. Integration of DER into Operations: what, if any, additions or modifications would you suggest to the Integration of DER into Operations section of this paper?

**Response:** See response to question 16 a, above.

### **III. CONCLUSION.**

CESA appreciates this opportunity to comment on the OIR, and looks forward to working with the Commission and stakeholders in this proceeding.

Respectfully submitted,



Donald C. Liddell  
DOUGLASS & LIDDELL

Attorney for the  
**CALIFORNIA ENERGY STORAGE ALLIANCE**

Date: September 5, 2014

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<sup>4</sup> OIR Appendix B, “More Than Smart,” p. 18.